

# PATENT SPECIFICATION



Application Date: April 7, 1926. No. 9227/26.

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One Complete Left: Jan. 5, 1927.

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271,212

## PROVISIONAL SPECIFICATION.

No. 9227, A.D. 1926.

### Improvements in Batten Lights and Footlights.

We, HOLOPHANE LIMITED, a company organised and existing under the laws of Great Britain and Ireland, of Elvertton Street, Vincent Square, London, S.W. 1, and ROLLO GILLESPIE WILLIAMS, of 39, Southdown Road, Wimbledon, England, a subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention to be as follows:—

10 The present invention relates to improvements in theatre battens and in footlight beams or supports.

15 The present invention is designed to provide a theatre batten of such dimensions that it will cause no interference or inconvenience with scenery drops while it is mechanically strong and will not sag in use. The construction of the batten is proof against any blows or shocks to which it may be subjected from the movement of scenery or other causes during scene shifting and like operations. The exterior surface of the batten is perfectly smooth with no bolts, hinges or other projecting parts capable of catching in the scenery. The exterior cover is removable and the construction of the batten is such that when said cover is removed the whole of the wiring, the reflectors and the lamp holders, are easily accessible. The wiring system is arranged so that any lamp holder with its individual cables can be easily taken out without touching the circuit cables or vice versa.

35 The present invention comprises a detachable sheet iron cover for the framework of the batten adapted to enclose all bolt heads, hinges and like parts, and to render the outside of the batten perfectly

smooth, so that it cannot catch in the scenery. This cover is detachable in sections conveniently of two or three feet in width. When removed the whole of the batten including wiring trough is open to inspection. The structure of the batten includes the arrangement of iron straps fixed conveniently 18" apart along the length of the batten. These straps are strengthened and held in position by tie rods which are secured to transverse T-pieces bolted to longitudinal angle irons extending throughout the length of the batten. The above mentioned straps are adapted to support the detachable cover and to receive the force of any blows the batten may be subjected to from the scenery or other causes during scene shifting operations.

20 The said longitudinal angle irons prevent the batten from sagging and give the mechanical strength to the structure. Additional strength is given to the structure by the transverse T-pieces which are bolted to the said longitudinal angle irons at intervals. These T-pieces also prevent any tendency for the angle irons to be pulled upwards towards each other. The said angle irons can be provided with bolt holes at short intervals apart to allow of varying the positions of the T-pieces for different arrangements of reflectors. The reflectors are mounted on galleries which are bolted to a sheet of metal fixed between the said longitudinal angle irons and their cross T-pieces. Each lamp holder, which is of the batten type, is screwed on to a block of the material sold under the registered trade mark

[Price 1/-]

Siluminite or other insulating material mounted within its reflector gallery and is thus insulated from metal work of batten. By releasing thumbscrews the  
 5 block and lamp holder may be drawn out through the bottom of the gallery and reflector without disturbing them. The terminals of each lamp holder are mounted on a separate block of Siluminite  
 10 or other insulating material secured conveniently by screws to a cross strap bolted at its ends to the longitudinal angle irons. These cross straps form with the  
 15 straps which support the cover, a wiring trough of ample dimensions, every part of which is accessible when the top section of the cover is removed. The main cables feeding the lamp holders are looped  
 20 round the stems of the terminals carried by the last mentioned insulated blocks, and gripped between the nuts on said terminals, which nuts are suitably enclosed in insulated covers. The ends  
 25 of short lengths of cable lead from the lamp holder, are inserted into the hollow stems of the said terminals and are conveniently gripped therein by screws. This arrangement allows of any lamp  
 30 holder with its individual cables being quickly disconnected and withdrawn without disturbing the main cables. Similarly the main cables can be disconnected without disturbing the lamp  
 35 holder cables. Owing to the fact that the main cables are looped around the stems

of the terminals without being cut and are thus unbroken and continuous, a higher electrical efficiency and a lower voltage drop is obtained for the batten  
 40 than with the usual wiring system. In order to provide for coloured lights, coloured gelatine medium screens are gripped in frames, which frames are  
 45 hinged to the cover of the batten and are adapted to be held tightly against the bottoms of their respective reflectors.

A similar sectional cover supported by straps to that described, can be employed for the beams carrying the lamp holders  
 50 of the footlights. This cover is adapted to enclose the reflectors of the footlights which are mounted upon and secured thereto by means of an inner plate and wing nuts, suitably shaped iron plates  
 55 extending the length of the supporting beam. The reflectors are conveniently fitted with guards. A cable trough is formed by straps fastened to the upper part of the beam which is fully exposed  
 60 when the cover is opened. The lamp holders can be mounted upon Siluminite blocks and the wiring arrangements be similar to that described for the batten.

Dated this 7th day of April, 1926. 65

SEFTON-JONES, O'DELL &  
 STEPHENS,  
 Chartered Patent Agents,  
 285, High Holborn, London, W.C. 1,  
 Agents for the Applicants. 70

#### PROVISIONAL SPECIFICATION.

No. 259, A.D. 1927.

#### Improvements in Batten Lights and Footlights.

We, HOLOPHANE LIMITED, a company organised and existing under the laws of Great Britain and Ireland, of Elverton Street, Vincent Square, London, S.W. 1,  
 75 and ROLLO GILLESPIE WILLIAMS, of 39, Southdown Road, Wimbledon, England, a subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention to be as follows:—

80 The present invention relates to certain improvements and modifications in the invention described in our Provisional Specification No. 9227/26. That specification describes a theatre batten or foot-  
 85 light consisting of a rigid metal framework provided with sheet metal covers to render its outside perfectly smooth. According to the present invention this framework consists of a channel built  
 90 up from two longitudinal angle irons

secured to end frames and intermediate frames. These frames are preferably cast but may instead be built up of wrought metal. Instead of securing the  
 95 lighting units by means of bolts passing through holes in the angle irons, a greater range of adjustment is provided by arranging the bolt heads to clip the edges of the angle irons.

The sheet metal covers are hinged conveniently by means of hinge rods extending from end to end and carried by the end frames. 100

The reflectors used are preferably of prismatic glassware and have their sides cut away. The lighting units are preferably arranged in pairs so that if one lamp fails the lateral spread of light from the adjacent lamp will prevent formation of  
 110 V-shaped shadows. Where colour light-

ing is used the units are preferably arranged in pairs of a colour and opaque divisions are provided between the different colours to prevent lateral mixing of the light.

For colour lighting a tray is provided hinged along one side immediately below or above the hinge rod for the metal cover. Alternatively it may be hinged on the same rod. On the other side the tray is held in position by lugs coming into line with lugs on the framework, a pin similar to the hinge rod being passed through these lugs to hold them in position. The downward drop of the tray is limited conveniently by chains attached to the tray and to the framework.

The tray is divided into sections for each colour and between the sections there are provided up-standing opaque divisions which project between the pairs of lighting units to prevent lateral overlapping of different colour lighting. Con-

veniently the tray is built up of angle iron and the opaque divisions may be adjustable corresponding with and in similar manner to the lighting units. The colour screens themselves are conveniently of gelatine medium or the like and slide in flat frames which simply rest in the sections of the tray. To change the colours the tray is simply dropped as far as the chains will permit when the screens can be removed and replaced. The angle of drop limited by the chains is such as will allow this to be easily effected, but insufficient to allow the screens to fall out. The angle may be about 45° to the horizontal.

Dated this 4th day of January, 1927.

SEFTON-JONES, O'DELL &  
STEPHENS,  
Chartered Patent Agents,  
285, High Holborn, London, W.C. 1,  
Agents for the Applicants.

#### COMPLETE SPECIFICATION.

#### Improvements in Batten Lights and Footlights.

We, HOLOPHANE LIMITED, a company organised and existing under the laws of Great Britain and Ireland, of Elverton Street, Vincent Square, London, S.W. 1, and ROLO GILLESPIE-WILLIAMS, of 39, Southdown Road, Wimbledon, England, a subject of the King of Great Britain and Ireland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to improvements in theatre battens and in footlight beams or supports.

The present invention is designed to provide a theatre batten of such dimensions that it will cause no interference or inconvenience with scenery drops while it is mechanically strong and will not sag in use. The construction of the batten is proof against any blows or shocks to which it may be subjected from the movement of scenery or other causes during scene shifting and like operations. The exterior surface of the batten is perfectly smooth with no bolts, hinges or other projecting parts capable of catching in the scenery. The exterior cover is removable and the construction of the batten is such that when said cover is removed the whole of the wiring, the reflectors and the lamp holders, are easily accessible. The wiring system is

arranged so that any lamp holder with its individual cables can be easily taken out without touching the circuit cables or vice versa.

It should be understood that it has already been proposed in a theatre batten to enclose the lamp sockets and the wiring therefor in a channel provided with a hinged cover.

According to this invention the framework of the batten light or footlight forms a channel in which the illuminating units can be adjusted and a support for outer covers which are detachable in the sense that they can be lifted off the framework to render accessible the illuminating units. The covers themselves are conveniently hinged to the framework and are adapted when shut to enclose all bolt heads, hinges and other parts and thus render the outside of the batten perfectly smooth.

The lamps are enclosed in reflectors preferably of prismatic glassware so as to direct all the available light where it is required. The reflectors are cut away at their sides to allow a spread of light in the direction of the batten so that where burn outs or lamp failures take place, the distribution of light will still be even and no V-shaped shadows thrown on the scenery. Where colour lighting is desired, the reflectors are arranged in pairs of the same colour and opaque

divisions provided between the different colours. Conveniently such divisions stand up from a tray hinged to the batten, and in which colour screens are carried. The divisions are conveniently made adjustable to suit the spacing of the illuminating units.

The whole construction is extremely strong and light in weight, while the variable spacing and the use of reflectors allows the utmost lighting efficiency (and correspondingly therewith the minimum consumption of electricity) to be obtained.

An embodiment of the invention is illustrated by way of example in the accompanying drawings, in which—

Figure 1 is a side view with the hearer cover broken off.

Figure 2 is an end view.

Figure 3 is a plan view.

Figure 4 is an end view with the colour screen tray in position.

Figure 5 is a side view of said tray, and

Figure 6 is a half plan view of said tray.

The framework is built up of a pair of angle irons 1, 2, and a number of frames 3 and 4. The angle irons 1, 2, form a channel in which illuminating units are slidable for adjustment. The units comprise a terminal block 5 carried on a metal bridge 7 on top of the gallery 6 which rests on the angle irons 1, 2. The galleries carry the reflectors 8 and inside, preferably slidably to allow of focussing, the lamp holders. The bridges 7 are held in adjusted position by bolts 9 which may pass through any of a series of holes, or which may simply grip the leg of the angle with their heads when tightened.

The batten is conveniently made up in lengths which can be bolted together end to end. The end frames 4 of each length are provided with holes 10 for this purpose and also with eyes 11 for the suspension chains. The non-abutting ends are preferably provided with metal cover plates 40. The eyes 11 abut when two lengths are bolted together and the one chain passes through the two. A hinge rod 12 extends on each side of the battens between the legs of the end frames and sheet metal covers 13 are hinged on each rod 12. The covers are shaped to enclose the whole of the sides and top of the batten and abut along the centre of the top, hinged clips 14 being provided to hold the abutting edges together. The covers are provided with ventilating holes 15. The frames 4 are shaped to support the covers over their whole contour. The frames 3 may conveniently be cast from the same patterns as the frames 4, and

the eyes and extreme ends of the legs cut off. The frames may alternatively be built up of wrought iron or steel.

When the covers are opened the whole of the interior of the batten is accessible and the wiring, reflectors and other parts can be inspected, adjusted or repaired. The wiring of the terminal blocks is arranged so that any block can be disconnected from the main leads without interfering with other blocks, and so that any lamp holder can be disconnected from its block without interfering with the main leads.

The reflectors 8 are of prismatic glassware. Their contour is such as to give the desired spread of light transversely to the batten while at the sides they are cut off vertically as at 16. This allows the illuminating units to be spaced closer together if desired and also allows the light to spread in the direction of the batten so that if a lamp burns out the loss of light is evened out by the adjacent lamps on either side and there is no local loss of light to cause V-shaped shadows on the stage.

Where the batten is intended to provide coloured lighting, the illuminating units are preferably grouped in pairs of a colour, with an opaque division between different coloured pairs. This gives the advantage of spread for the case where a lamp burns out, while it prevents interference between colours by transmission or reflection. Colour effects are obtained by means of screens of coloured gelatine medium which slide into frames which rest in a tray 23 hinged to the bottom of the batten on a hinge pin 17 which may be above or below the hinge rod 12. Alternatively the tray may be hinged on the rod 12 itself. At the other end the tray is held in position by pins passing through lugs 18 on the tray and holes in the frames 4. By removing these pins the tray can be dropped about the hinge pin 17, the drop being limited by chains 19 to such an angle (as indicated in dotted lines in Figure 4) as will allow the screens to be changed easily without any risk of their falling out.

The tray 23 may be built up of angle iron, and the opaque screens 20 carried on cross members 21 of angle iron. These are held in position by the heads of bolts 22 clipping the horizontal legs of the longitudinal members of the tray and can thus be adjusted in position to suit the spacing of the illuminating units.

The general construction described above can also be applied to footlights.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to

be performed, we declare that what we claim is:—

1. A batten light or footlight in which the framework forms a rigid channel wherein the illuminating units can be adjusted and a support for outer covers adapted to be lifted off the framework to render accessible the illuminating units.
2. A batten light or footlight according to Claim 1, in which the covers are hinged to the framework and adapted when shut to enclose all bolt heads, hinges and other parts and thus render the outside of the batten or footlight perfectly smooth.
3. A batten light or footlight, according to Claim 1 or 2, in which the lamps are enclosed in reflectors with their sides cut away to allow spread of light in the direction of the batten.
4. A batten light or footlight, according to Claim 3, in which the reflectors are arranged in pairs of the same colour, opaque divisions being provided between different coloured pairs.
5. A batten light or footlight according to Claim 4, in which the colour screens are carried in a tray hinged at the bottom of the batten.
6. A batten light or footlight accord-

ing to Claim 5, in which the opaque divisions are carried adjustably in the tray.

7. A batten light or footlight according to Claim 1 or 2, in which the framework comprises a pair of angle irons secured to end and intermediate frames carrying at their outer extremities hinge rods for the covers.

8. A batten light or footlight according to Claim 7, in which the frames support the covers over their whole contour.

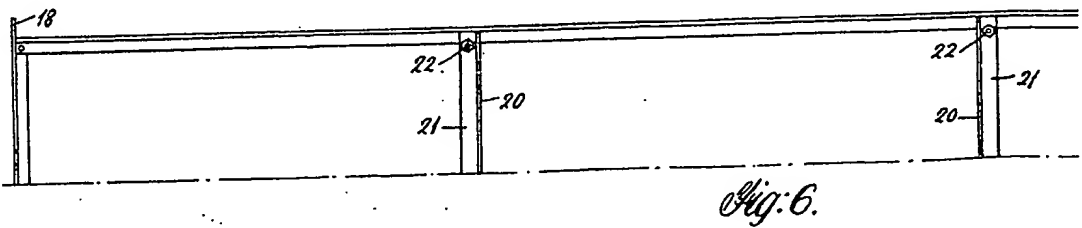
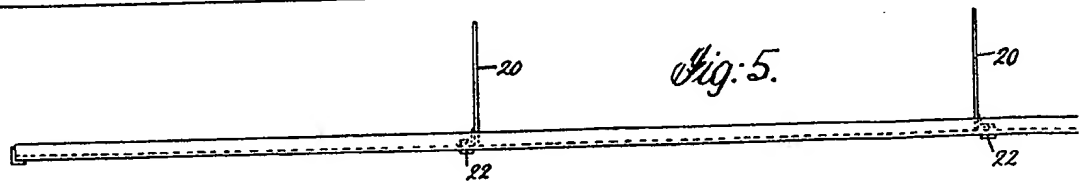
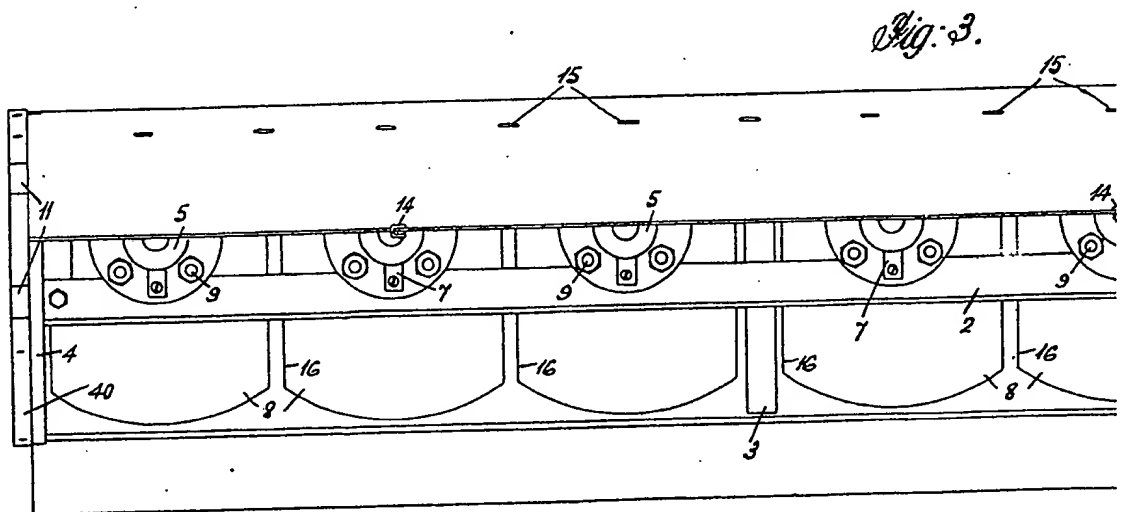
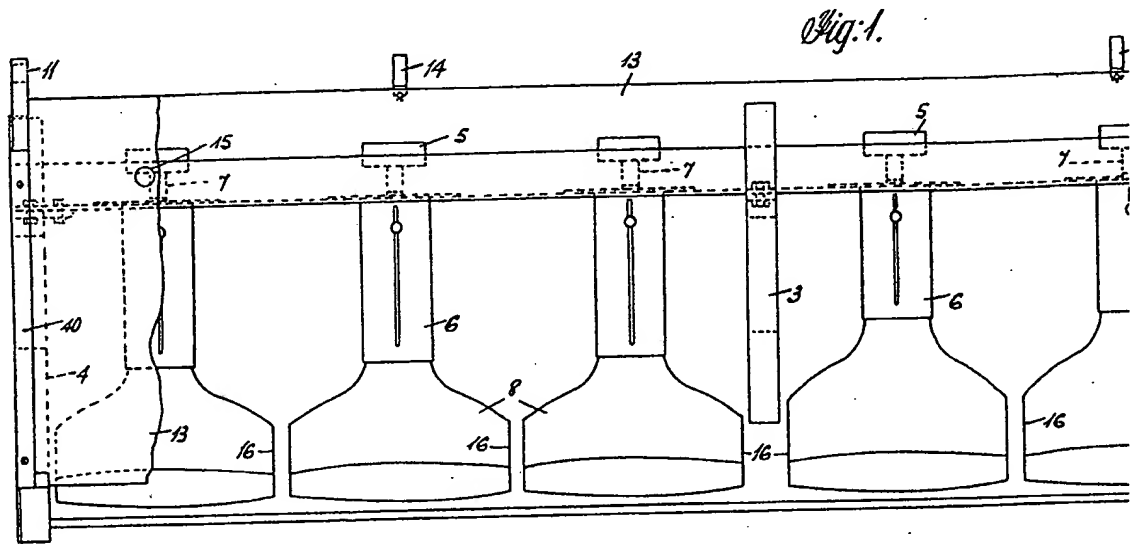
9. A batten light or footlight according to Claim 7, made in lengths, the end frames being adapted to be bolted together and having suspension eyes which abut when the lengths are bolted together, so that the suspension chains can be passed through both abutting eyes.

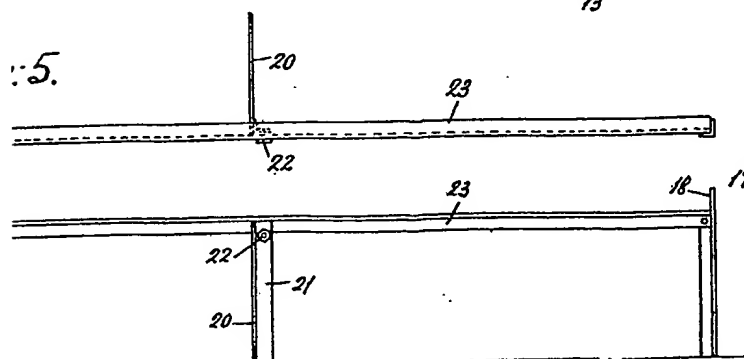
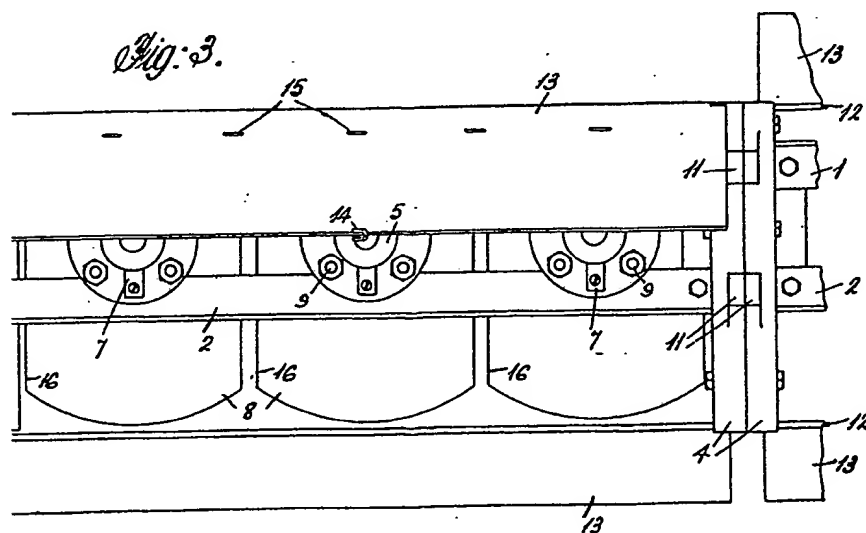
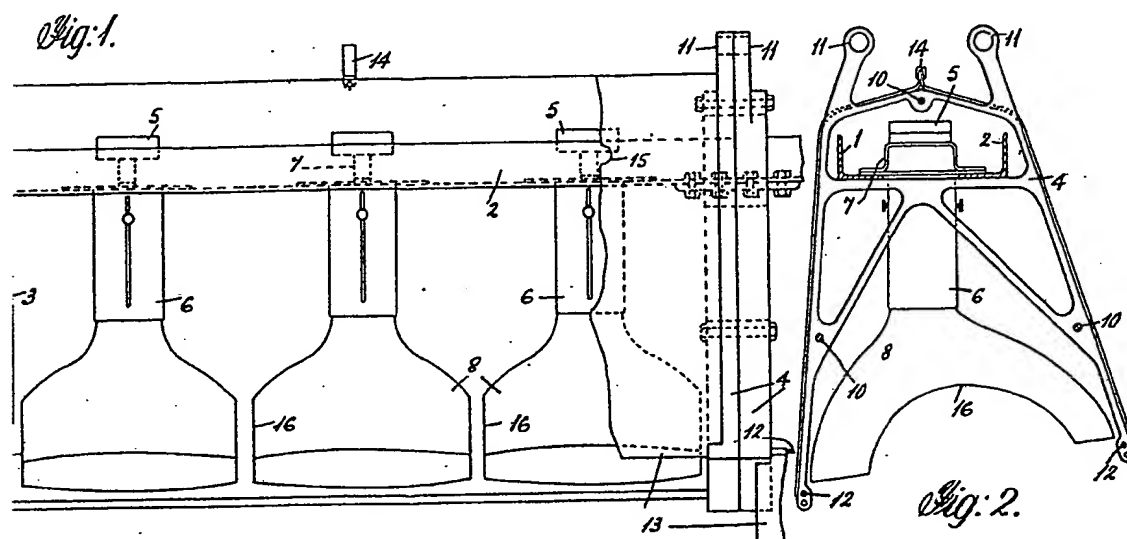
10. Batten lights and footlights substantially as described with reference to the accompanying drawings.

Dated this 5th day of January, 1927.

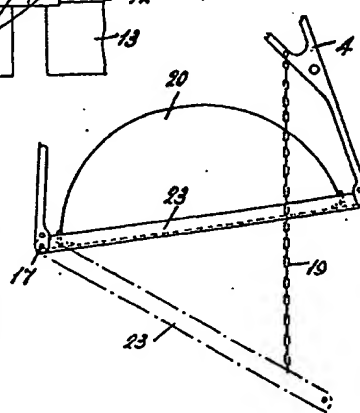
SEFTON-JONES, O'DELL &  
STEPHENS,  
Chartered Patent Agents,  
285, High Holborn, London, W.C. 1,  
Agents for the Applicants.

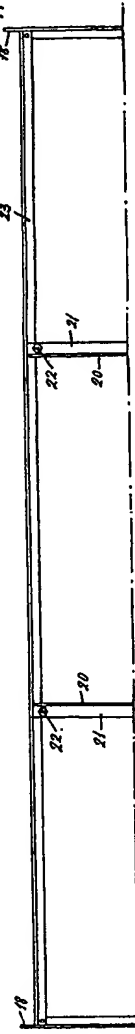
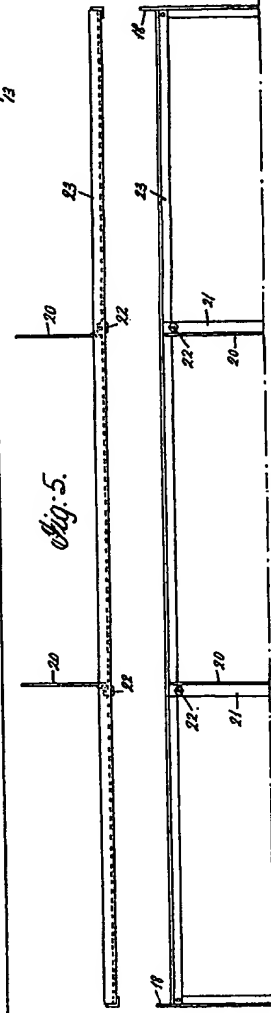
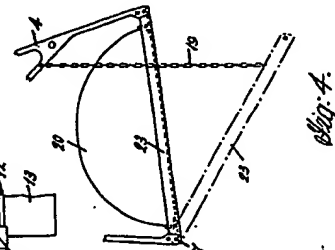
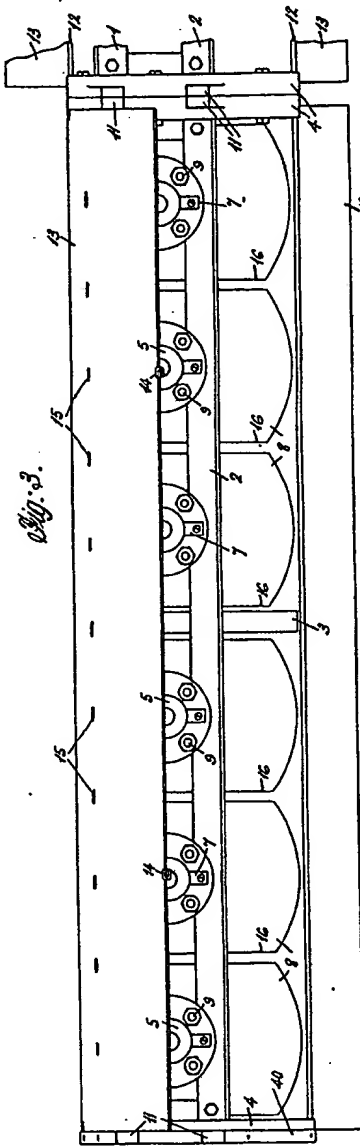
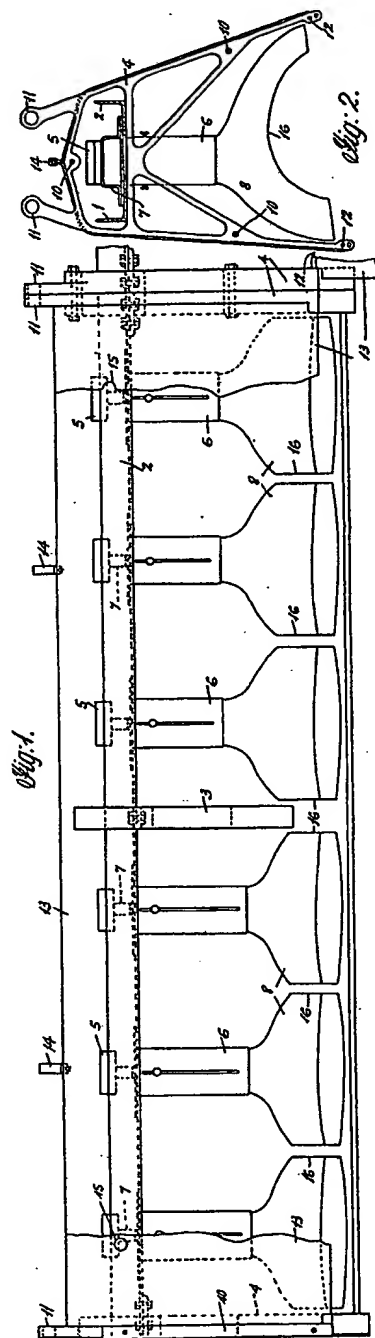
[This Drawing is a reproduction of the Original on a reduced scale.]





*Fig. 6.*





[This Drawing is a reproduction of the Original on a reduced scale]